REMARKS

Claim Objections

The objection to claims 26 and 31 has been overcome.

35 U.S.C § 112

The rejection of claims 31-35 under 35 U.S.C. 112, second paragraph has been overcome.

The examiner rejected Claim 39 under 35 U.S.C. 112, second paragraph, as being indefinite.

The examiner noted a dependency error in Claim 39. Claim 39 has been amended to depend from claim 36 and to clarify that the plug is for coupling to an AC outlet.

35 U.S.C § 103

The examiner rejected Claims 26-28, and 30 under 35 U.S.C. 103(a) as being unpatentable over Bean et al. (6,955,863) in view of Droppo et al. (6,628,011).

The examiner stated:

> **Claim 26: Bean et al. in Figures 2, 3A and 11 disclose a hybrid power supply comprises:**
>
> **an adapter comprising: a member including appropriate mating fittings (110, 112) on a common planar surface (see Figures 4A, 4B and 9, coi. 4: 65-col. 5: 11, col. 5: 44-62, and col. 8: 24-46) to allow the member to connect to a battery (102) or a source of fuel (104) for a fuel cell system for powering an electronic device (101, 240) and; a switching type DC/DC boost type converter (230) coupled to the member (100, 202) and which receives energy from a fuel cell (104, 220) or from an external battery connected to the member (col. 3: 33-47, col. 4: 13-35, col. 10:3-10, and 64-67).**
>
> **Bean et al. do not disclose a switching type DC/DC boost type converter that is arranged to deliver the energy to a rechargeable cell, the DC/DC converter configured to provide substantially constant current drain from the fuel cell.**
>
> **Droppo et al. in Figures 2-4 disclose a switching type DC/DC boost type converter (14) that is arranged to deliver the energy to a rechargeable cell (25), the DC/DC converter configured to provide substantially constant current drain from the fuel cell (col. 2: 28-col. 4: 35). The configuration of the converter is similar to that instantly disclosed, and, therefore, would obviously provide substantially constant current drain from the fuel cell.**
>
> **Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified apparatus of Bean et al. by substituting the booster with the booster and rechargeable battery of Droppo et al. because Droppo et al. teach a booster in combination with a rechargeable battery that would have provided a power management system that manages power flow to and from multiple, isolated DC power sources and energy storage devices while**

delivering high quality alternating power to a load thereby improving the overall energy conversion of the apparatus.

Claim 26 calls for an adapter including "a member including appropriate mating fittings on a common surface to allow the member to connect to a battery or a source of fuel for a fuel cell system ... and a switching type DC/DC boost type converter coupled to the member ... , the DC/DC converter configured to provide substantially constant current drain from the fuel cell."

The examiner argues that Bean teaches: "**an adapter comprising: a member including appropriate mating fittings (110, 112) on a common planar surface (see Figures 4A, 4B and 9, col. 4: 65-col. 5: 11, col. 5: 44-62**" Applicant disagrees.

Bean's FIGS. 4A, 4B are reproduced below:

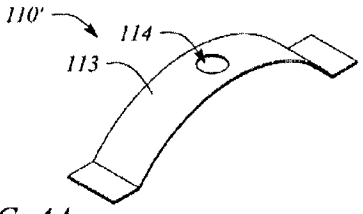

FIG. 4A

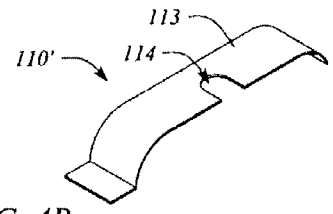

FIG. 4B

FIGS. 4A, 4B show two battery contacts 110'. However, while they may be illustrated on a common surface, e.g., the piece of paper, claim 26 calls for an adapter comprising a member including appropriate mating fittings on a common surface. Bean does not show "an adapter comprising a member including appropriate mating fittings on a common surface."

In Bean, the battery contacts 110' are provided in an adapter arrangement as illustrated in FIG. 11, below.

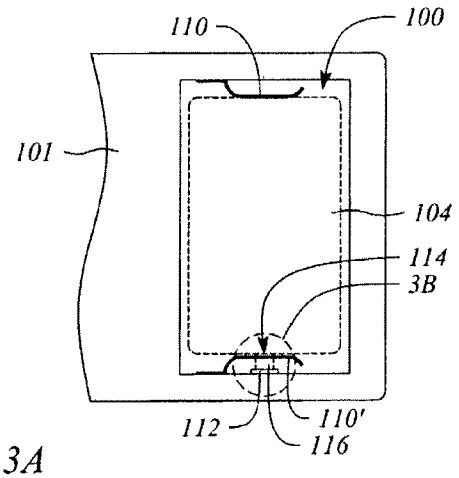

FIG. 3A

In this arrangement, while the compartment interchangeably holds either a battery or a fuel cartridge, it does not suggest the features of claim 1, which calls for a "member having a pair of mating fittings on a common planar surface to couple either a fuel cartridge ... or ... a battery to ... the device." Bean modifies the battery contact to accommodate an aperture for the fuel cartridge. Bean, however, cannot use the pair of mating fittings on the common planar surface to connect the battery or, e.g., the fuel cartridge. Rather, only one of the fittings for the battery is accommodated on the common planar surface used to connect the fuel cartridge.

In Bean, one of the terminals 110' contacts the anode of a battery and an opposing terminal 110', e.g., in a different, albeit parallel plane, contacts the cathode of the battery, as is depicted in Figures 2 and 3A or FIG. 11. The two contacts shown in Figures 4A, B contact one of the terminals of a battery but do not suggest the arrangement of "an adapter comprises a member including appropriate mating fittings on a common surface to allow the member to connect to a battery or a source of fuel for a fuel cell system ... ," as claimed in claim 1.

Accordingly, claim 1 is neither anticipated nor rendered obvious by Bean et al and Droppo, because Droppo which is used to teach "**switching type DC/DC boost type converter**" does not cure the deficiencies in the teachings of Bean.

Claim 27 further limits claim 26, and includes the feature of: "... a circuit disposed to sense when a voltage is present across terminals of the member to cause power to be supplied to

rechargeable battery from an external battery when the external battery is present or from a fuel cell when the battery is not present." The examiner argues that:

> **Claim 27: The rejection is as set forth above in claim 26 wherein further Droppo et al. disclose a circuit (12) disposed to sense when a voltage is present across terminals of the member interface to cause power to be supplied to rechargeable battery from an external battery when the external battery is present or from a fuel cell when the battery is not present (col. 2: 55-65).**
>
> **In particular, Droppo et al. disclose that the controller module 12 senses and analyzes the operating output of the power sources 20, 25. The system 12 also automatically controls the charging and discharging of the battery bank.**

Claim 27 is allowable over the combination of Bean with Droppo because no combination of these references suggests a circuit disposed to sense when a voltage is present across terminals of the member to cause power to be supplied to rechargeable battery from an external battery when the external battery is present or from a fuel cell when the external battery is not present. Droppo discloses:

> **The Controller Module (or System Controller) 12 manages both the Inverter Module 16 and the Converter Module 14 to provide an integrated control system. The primary functions of the Controller Module 12 are to control the current drawn out of the fuel cell and to operate the Inverter Module 16. The Controller 12 (in combination with the DC to DC Converter 14) controls the voltage of the variable voltage DC bus. The Control Module 12 thereby provides coordinated control of the Power Management System 10. All of the modules, or subsystems, of the Power Management System 10 can be physically integrated together into a single hardware package.**

Droppo does not suggest the feature of the circuit as claimed in claim 27.

Claims 28-30 are allowable over the cited art for the reasons of record.

The examiner rejected Claim 29 under 35 U.S.C. 103(a) as being unpatentable over Bean et al. in view of Droppo et al. as applied to claim 26 above, and further in view of Payne.

Claim 29 is allowable over the combination of Bean et al. in view of Droppo et al and Payne at least for the reasons discussed in claim 27 and/or of record.

The examiner rejected Claims 31-33 and 35 under 35 U.S.C. 103(a) as being unpatentable over Bean et al. (6,955,863) in view of Droppo et al. (6,628,011), and further in view of Payne (5,309,082).

Claim 31 along with claims 32 and 35 are allowable over the combination of Bean et al. in view of Droppo et al and Payne at least for the reasons discussed in claim 27 and/or of record.

The examiner rejected Claim 34 under 35 U.S.C. 103(a), as being unpatentable over Bean et al. in view of Droppo et al., and further in view of Payne as applied to claim 31 above, and further in view of Amatucci (6,517,972).

Claim 34 is allowable over the combination of Bean et al. in view of Droppo et al and Payne at least for the reasons discussed in claim 27 and/or of record

35 U.S.C §102

The examiner rejected Claims 36-39 under 35 U.S.C. 102(e) as being anticipated by Bourilkov et al. (US 2004/0253500).

Applicant contends that claims 1-4 are patentable over Bourilkov et al. The examiner relies principally on paragraphs [0021] and [0022]. These are reproduced below:

> **[0020] The interconnect 20 can distinguish between a fuel cartridge and a battery. The interconnect 20 provides a convenient technique to allow a fuel cell-powered device to operate in situations where a fuel cartridge is temporarily unavailable. This is accomplished by the interconnect 20 between a fuel cell power source and a fuel cartridge. The interconnect 20 allows the power source to automatically detect the insertion of a primary or charged secondary battery or batteries into the fuel cartridge cavity. The interconnect 20 allows the primary or secondary battery or batteries to operate the device and allow consumer use of their device in the temporary absence of a fuel cartridge. Device 12 can be any type of portable device such as a mobile phone, portable computer or audio/video device. In general, device 12 would include an operable portion (not shown), i.e., the part of the device that provides the device's function, a fuel cell (not shown) to provide portable power to the device and the interconnect 20 all housed within the housing 11.**
>
> **[0021] Referring to FIG. 2, interconnect 20 provides an interface between a fuel cell 22 and a fuel cartridge or battery (not shown). The interface 20 has appropriate mating fittings 32 to allow a fuel cartridge (not shown) to connect to the interface 20 and deliver fuel to the fuel cell 22 disposed in the device 12. The mating fitting 32 provides an ingress fuel interface port. The interface port 32 can be a simple valve or merely an ingress port or other configuration enabling passage of a liquid or gas fuel and allow secure, leak-proof mating with a complementary port on a fuel cartridge. The mating fitting 32 allows liquid or gas fuel to flow into the fuel cell 22, via an egress port 33 to enable operation of the fuel cell. The interface 20 also includes a pair of spring-loaded battery terminal contacts 34a, 34b disposed on a common surface of the interconnect 20 to allow for contact with battery terminals in a prismatic battery system. The fuel cell 22 receives fuel from the fuel cartridge that is connected to the interconnect 20. The fuel cell converts the fuel into electrical energy that is used to power electronic circuits 24 that provide the operational functionality for the device 12. The electronic circuits 24 can also be powered by a battery (not shown) that is connected to the interconnect 20.**

Nowhere in Bourilkov el al. (US 2004/0253500) does Bourilkov el al. disclose the claimed "adapter." Rather, Bourilkov el al. discloses an interconnect 20 housed in the compartment 14. Accordingly, claims 33-39 are not anticipated by Bourilkov el al.

Claims 36-39 are allowable for analogous reasons.

No fee is due. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 5/12/08

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